

**CPC****COOPERATIVE PATENT CLASSIFICATION****B64C****AEROPLANES; HELICOPTERS** ([air-cushion vehicles B60V](#))**NOTE****WARNING**

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

- [B64C 35/02](#) covered by [B64C 35/00](#)

**Aircraft structures or fairings** ([boundary-layer controls B64C 21/00](#))**B64C 1/00**

**Fuselages; Constructional features common to fuselages, wings, stabilising surfaces and the like** ([aerodynamical features common to fuselages, wings, stabilising surfaces, and the like B64C 23/00](#); [flight-deck installations B64D](#))

## B64C 1/0009

. { Aerodynamic aspects}

## B64C 1/06

. Frames; Stringers; Longerons; { Fuselage sections}

## B64C 1/061

.. { Frames}

## B64C 1/062

... { specially adapted to absorb crash loads}

## B64C 1/063

... { Folding or collapsing to reduce overall dimensions, e.g. foldable tail booms  
([folding or collapsing wings B64C 3/56](#))}

## B64C 1/064

.. { Stringers; Longerons}

## B64C 1/065

.. { Spars}

## B64C 1/066

.. { Interior liners}

## B64C 1/067

... { comprising means for preventing icing or condensation conditions}

## B64C 1/068

.. { Fuselage sections}

## B64C 1/069

... { Joining arrangements therefor}

## B64C 1/08

.. Geodetic or other open-frame structures

## B64C 1/10

.. Bulkheads

## B64C 1/12

.. Construction or attachment of skin panels

## B64C 1/14

. Windows; Doors; Hatch covers or access panels; Surrounding frame structures; Canopies; Windscreens { accessories therefor, e.g. pressure sensors, water deflectors, hinges, seals, handles, latches, windscreen wipers}([fairings movable in conjunction with undercarriage elements B64C 25/16](#); [bomb doors B64D 1/06](#))

## B64C 1/1407

.. { Doors; surrounding frames}

## B64C 1/1415

... {Cargo doors, e.g. incorporating ramps}

## B64C 1/1423

... { Passenger doors}

## B64C 1/143

.... { of the plug type}

- B64C 1/1438 . . . . { of the sliding type} [N0804
- B64C 1/1446 . . . { Inspection hatches (for engine cowls [B64D 29/08](#))}
- B64C 1/1453 . . . { Drain masts}
- B64C 1/1461 . . . { Structures of doors or surrounding frames}
- B64C 1/1469 . . . { Doors between cockpit and cabin}
- B64C 1/1476 . . {Canopies; Windscreens or similar transparent elements}
- B64C 1/1484 . . . {Windows ([B64C 1/1492](#) takes precedence)}
- B64C 1/1492 . . . {Structure and mounting of the transparent elements in the window or windscreen}
  
- B64C 1/16 . specially adapted for mounting power plant
  
- B64C 1/18 . Floors
- B64C 1/20 . . specially adapted for freight
  
- B64C 1/22 . Other structures integral with fuselages to facilitate loading { e.g. cargo bays, cranes (cargo door type ramps [B64C 1/1415](#))}
  
- B64C 1/24 . Step mounted on an retractable within fuselages ([readily removable B64D 9/00](#))
  
- B64C 1/26 . Attaching the wing or tail units or stabilising surfaces
  
- B64C 1/28 . Parts of fuselage relatively movable to improve pilots view
  
- B64C 1/30 . Parts of fuselage relatively movable to reduce overall size for storage
  
- B64C 1/32 . Severable or jettisonable parts of fuselage facilitating emergency escape ([ejector seats B64D 25/10](#))
  
- B64C 1/34 . comprising inflatable structural components ([connection of valves to inflatable elastic bodies B60C 29/00](#))
  
- B64C 1/36 . adapted to receive aerials or radomes ([aerials or radomes per se H01Q](#))
  
- B64C 1/38 . Constructions adapted to reduce effects of aerodynamic or other external heating ([cooling structural parts of aircrafts with air flow B64D 13/006](#))}
  
- B64C 1/40 . Sound or heat insulation, { e.g. using insulation blankets (insulating elements for vehicles, in general [B60R 13/08](#))}
- B64C 1/403 . . { Arrangement of fasteners specially adapted therefor, e.g. of clips (in vehicles in general [B60R 13/0206](#))}
- B64C 1/406 . . . { in combination with supports for lines, e.g. for pipes or cables (arrangement of elements of electric or fluid circuits specially adapted for vehicles, in general [B60R 16/00](#); supports for pipes, cables or protective tubing [F16L 3/00](#); installations of electric cables or lines in vehicles [H02G 3/00](#))}
  
- B64C 3/00** **Wings** ([stabilising surfaces B64C 5/00](#); [ornithopter wings B64C 33/02](#))
  
- B64C 3/10 . Shape of wings
- B64C 3/14 . . Aerofoil profile

- B64C 3/141 . . . {Circulation Control Airfoils}
- B64C 3/16 . . Frontal aspect
  
- B64C 3/18 . Spars; Ribs; Stringers (attaching wing unit to fuselage [B64C 1/26](#))
- B64C 3/182 . . {Stringers, longerons}
- B64C 3/185 . . {Spars}
- B64C 3/187 . . {Ribs}
  
- B64C 3/20 . Integral or sandwich constructions (layered products or sandwich constructions in general [B32B](#))
  
- B64C 3/22 . Geodetic or other open-frame structures
  
- B64C 3/24 . Moulded or cast structures
  
- B64C 3/26 . Construction, shape, or attachment of separate skins, e.g. panels
  
- B64C 3/28 . Leading or trailing edges attached to primary structures, e.g. forming fixed slots
  
- B64C 3/30 . comprising inflatable structural components (connection of valves to inflatable elastic bodies [B60C 29/00](#))
  
- B64C 3/32 . specially adapted for mounting power plant
  
- B64C 3/34 . Integrally-constructed tanks, e.g. for fuel (other aircraft fuel tanks or fuel systems [B64D](#))
  
- B64C 3/36 . Structures adapted to reduce effects of aerodynamic or other external heating {(cooling structural parts of aircrafts with air flow [B64D 13/006](#))}
  
- B64C 3/38 . Adjustment of complete wings or parts thereof
- B64C 3/385 . . {Variable incidence wings}
- B64C 3/40 . . Varying angle of sweep
- B64C 3/42 . . Adjusting about chordwise axes
- B64C 3/44 . . Varying camber
- B64C 3/46 . . . by inflatable elements (connection of valves to inflatable elastic bodies [B60C 29/00](#))
- B64C 3/48 . . . by relatively-movable parts of wing structures
- B64C 3/50 . . . by leading or trailing edge flaps (ailerons [B64C 9/00](#))
- B64C 3/52 . . Warping
- B64C 3/54 . . Varying in area (flaps extendable to increase camber [B64C 3/44](#))
- B64C 3/546 . . . {by foldable elements}
- B64C 3/56 . . Folding or collapsing to reduce overall dimensions of aircraft
  
- B64C 3/58 . provided with fences or spoilers (adjustable for control purposes [B64C 9/00](#))
  
- B64C 5/00**      **Stabilising surfaces** (attaching stabilising surfaces to fuselage [B64C 1/26](#))

- B64C 5/02 . Tailplanes ([fins B64C 5/06](#))
- B64C 5/04 . Noseplanes
- B64C 5/06 . Fins ([specially for wings B64C 5/08](#))
- B64C 5/08 . mounted on or supported by wings
- B64C 5/10 . adjustable
- B64C 5/12 . . for retraction against or within fuselage or nacelle
- B64C 5/14 . . Varying angle of sweep
- B64C 5/16 . . about spanwise axes
- B64C 5/18 . . in area ([attaching stabilising surfaces to fuselage B64C 1/26](#))

### **B64C 7/00 Structures or fairings not otherwise provided for**

- B64C 7/02 . Nacelles

### **B64C 9/00 Adjustable control surfaces or members, e.g. rudders ([trimming stabilising surfaces B64C 5/10](#))**

- B64C 9/02 . Mounting or supporting thereof
- B64C 9/04 . with compound dependent movements
- B64C 9/06 . with two or more independent movements
- B64C 9/08 . bodily displaceable ([varying camber of wings B64C 3/44](#))
- B64C 9/10 . one surface adjusted by movement of another, e.g. servo tabs ([B64C 9/04 takes precedence; adjusting surfaces of different type or function B64C 9/12](#))
- B64C 9/12 . surfaces of different type or function being simultaneously adjusted
- B64C 9/14 . forming slots ([boundary-layer control B64C 21/00](#))
- B64C 9/146 . . { [at an other wing location than the rear or the front \(wings provided with fixed fences or spoilers B64C 3/58\)](#) }
- B64C 9/16 . . at the rear of the wing
- B64C 9/18 . . . by single flaps
- B64C 9/20 . . . by multiple flaps
- B64C 9/22 . . at the front of the wing
- B64C 9/24 . . . by single flap
- B64C 9/26 . . . by multiple flaps
- B64C 9/28 . . by flaps at both the front and rear of the wing operating in unison
- B64C 9/30 . Balancing hinged surfaces, e.g. dynamically

- B64C 9/32 . Air braking surfaces (braking by parachutes [B64D 17/80](#))
- B64C 9/323 .. { associated with wings}
- B64C 9/326 .. { associated with fuselages}
- B64C 9/34 . collapsing or retracting against or within other surfaces or other members
- B64C 9/36 .. the members being fuselages or nacelles
- B64C 9/38 . Jet flaps

**B64C 11/00 Propellers, e.g. of ducted type; Features common to propellers and rotors for rotorcraft** (rotors specially adapted for rotorcraft [B64C 27/32](#))

**NOTE**

Documents classified in [B64C 11/001](#) - [B64C 11/008](#) which also contain relevant information, covered by other subgroups of [B64C 11/00](#), are also classified in the appropriate subgroup of [B64C 11/00](#)

- B64C 11/001 . {Shrouded propellers}
- B64C 11/002 . {Braking propellers, e.g. for measuring the power output of an engine}
- B64C 11/003 . {Variable-diameter propellers; Mechanisms therefor}
- B64C 11/005 . {Spiral-shaped propellers}
- B64C 11/006 . {Paddle wheels}
- B64C 11/007 . {Propulsive discs, i.e. discs having the surface specially adapted for propulsion purposes}
- B64C 11/008 . {characterised by vibration absorbing or balancing means (for rotorcraft [B64C 27/001](#))}
- B64C 11/02 . Hub construction
- B64C 11/04 .. Blade mountings
- B64C 11/06 ... for variable-pitch blades
- B64C 11/065 .... {variable only when stationary}
- B64C 11/08 ... for non-adjustable blades
- B64C 11/10 .... rigid
- B64C 11/12 .... flexible
- B64C 11/14 .. Spinners
- B64C 11/16 . Blades
- B64C 11/18 .. Aerodynamic features
- B64C 11/20 .. Constructional features
- B64C 11/205 ... {for protecting blades, e.g. coating}
- B64C 11/22 ... Solid blades

- B64C 11/24 . . . Hollow blades
- B64C 11/26 . . . Fabricated blades
- B64C 11/28 . . . Collapsible or foldable blades
- B64C 11/30 . Blade pitch-changing mechanisms

**NOTE**

Groups [B64C 11/301](#), [B64C 11/303](#), [B64C 11/305](#) and [B64C 11/306](#) take precedence over [B64C 11/32](#), [B64C 11/38](#) and [B64C 11/44](#)

- B64C 11/301 . . {characterised by blade position indicating means}
- B64C 11/303 . . {characterised by comprising a governor}
- B64C 11/305 . . {characterised by being influenced by other control systems, e.g. fuel supply}
- B64C 11/306 . . {specially adapted for contrarotating propellers}
- B64C 11/308 . . . {automatic}
- B64C 11/32 . . mechanical
- B64C 11/325 . . . {comprising feathering, braking or stopping systems}
- B64C 11/34 . . . automatic
- B64C 11/343 . . . . {actuated by the centrifugal force or the aerodynamic drag acting on the blades}
- B64C 11/346 . . . . {actuated by the centrifugal force or the aerodynamic drag acting on auxiliary masses or surfaces}
- B64C 11/36 . . . non-automatic
- B64C 11/38 . . fluid, e.g. hydraulic
- B64C 11/385 . . . {comprising feathering, braking or stopping systems}
- B64C 11/40 . . . automatic
- B64C 11/42 . . . non-automatic
- B64C 11/44 . . electric
- B64C 11/46 . Arrangements of or constructional features peculiar to multiple propellers  
{([B64C 11/306](#) takes precedence)}
- B64C 11/48 . . Units of two or more coaxial propellers
- B64C 11/50 . . Phase synchronisation between multiple propellers

**B64C 13/00 Control systems or transmitting systems for actuating flying-control surfaces, lift-increasing flaps, air brakes, or spoilers**

- B64C 13/02 . Initiating means
- B64C 13/04 . . actuated personally
- B64C 13/06 . . . adjustable to suit individual persons
- B64C 13/08 . . . Trimming zero positions
- B64C 13/10 . . . comprising warning devices
- B64C 13/12 . . . Dual control apparatus
- B64C 13/14 . . . lockable (locking in position to suit individual persons [B64C 13/06](#))
- B64C 13/16 . . actuated automatically, e.g. responsive to gust detectors

- B64C 13/18 . . . using automatic pilot
- B64C 13/20 . . . using radiated signals
- B64C 13/22 . . . readily revertible to personal control
  
- B64C 13/24 . Transmitting means
- B64C 13/26 .. without power amplification or where power amplification is irrelevant
- B64C 13/28 . . . mechanical
- B64C 13/30 . . . . using cable, chain, or rod mechanisms
- B64C 13/32 . . . . using cam mechanisms
- B64C 13/34 . . . . using toothed gearing
- B64C 13/36 . . . fluid
- B64C 13/38 .. with power amplification
- B64C 13/40 . . . using fluid pressure
- B64C 13/42 . . . . having duplication or stand-by provisions
- B64C 13/44 . . . . overriding of personal controls; with automatic return to inoperative position
- B64C 13/46 . . . . with artificial feel
- B64C 13/48 . . . . characterised by the fluid being gaseous
- B64C 13/50 . . . using electrical energy
- B64C 13/503 . . . . {Fly-by-Wire}

#### **B64C 15/00 Attitude, flight direction, or altitude control by jet reaction**

- B64C 15/02 . the jets being propulsion jets
- B64C 15/12 .. the power plant being tiltable
  
- B64C 15/14 . the jets being other than main propulsion jets ([jet flaps B64C 9/38](#))

#### **B64C 17/00 Aircraft stabilisation not otherwise provided for**

- B64C 17/02 . by gravity or inertia-actuated apparatus
- B64C 17/04 .. by pendular bodies
- B64C 17/06 .. by gyroscopic apparatus ([automatic pilot control B64C 13/18](#))
  
- B64C 17/08 . by ballast supply or discharge ([for lighter-than-air aircraft B64B](#))
  
- B64C 17/10 . Transferring fuel to adjust trim

#### **B64C 19/00 Aircraft control not otherwise provided for**

- B64C 19/02 . Conjoint controls

#### **Influencing air-flow over aircraft surfaces, not otherwise provided for**

**B64C 21/00**      **Influencing air-flow over aircraft surfaces by affecting boundary-layer flow**  
(boundary-layer control in general [F15D](#))

- B64C 21/02      . by use of slot, ducts, porous areas, or the like
- B64C 21/025    ..    {for simultaneous blowing and sucking}
- B64C 21/04      ..    for blowing ([B64C 21/08](#) takes precedence)
- B64C 21/06      ..    for sucking ([B64C 21/08](#) takes precedence)
- B64C 21/08      ..    adjustable
- B64C 21/10      . using other surface properties, e.g. roughness

**B64C 23/00**      **Influencing air-flow over aircraft surfaces, not otherwise provided for**

- B64C 23/005    . {by other means not covered by groups [B64C 23/02](#) to [B64C 23/08](#), e.g. by electric charges, magnetic panels, piezoelectric elements, static charges or ultrasounds}
- B64C 23/02      . by means of rotating members of cylindrical or similar form
- B64C 23/04      . by generating shock waves
- B64C 23/06      . by generating vortices
- B64C 23/065    ..    {at the wing tip, e.g. winglets, splines}
- B64C 23/08      . using Magnus effect

**B64C 25/00**      **Alighting gear** (air-cushion alighting gear [B60V 3/08](#))

- B64C 25/001    . {Devices not provided for in the groups [B64C 25/02](#) to [B64C 25/68](#)}
- B64C 25/02      . Undercarriages
- B64C 25/04      ..    Arrangement or disposition on aircraft
- B64C 25/06      ..    fixed
- B64C 25/08      ..    non-fixed, e.g. jettisonable
- B64C 25/10      ...    retractable, foldable, or the like
- B64C 25/12      ....    sideways
- B64C 25/14      ....    fore-and-aft
- B64C 25/16      ....    Fairings movable in conjunction with undercarriage elements
- B64C 25/18      ....    Operating mechanisms
- B64C 25/20      .....    mechanical
- B64C 25/22      .....    fluid
- B64C 25/24      .....    electric
- B64C 25/26      .....    Control or locking systems therefor
- B64C 25/28      .....    with indicating or warning devices
- B64C 25/30      .....    emergency actuated

- B64C 25/32 . characterised by the ground or like engaging elements ([arrester hooks B64C 25/68](#))
- B64C 25/34 .. wheeled type, e.g. multi-wheeled bogies
- B64C 25/36 ... Arrangements or adaptations of wheels, tyres, or axles in general ([construction of wheels or axles B60B](#); [construction of tyres in general B60C](#))
- B64C 25/38 .. Endless-track type
- B64C 25/40 .. the elements being rotated before touch-down
- B64C 25/405 ... { [Powered wheels, e.g. for taxing](#) }
- B64C 25/42 .. Arrangements or adaptations of brakes ([the ground braking force being regulated, at least in part, by a speed condition, e.g. acceleration or deceleration of the ground engaging alighting gear, B60T 8/32](#))
- B64C 25/423 ... {[Braking devices acting by reaction of gaseous medium \(B64C 25/426 takes precedence; using rockets B64D 27/023\)](#)}
- B64C 25/426 ... {[Braking devices providing an automatic sequence of braking](#)}
- B64C 25/44 ... Actuating mechanisms
- B64C 25/445 .... {[Brake regulators for preventing somersaulting](#)}
- B64C 25/46 .... Brake regulators for preventing skidding or aircraft somersaulting  
{[anti-skidding regulators; electric or electronic controllers therefor B60T 8/1703](#)}
- B64C 25/48 .... differentially operated for steering purposes
- B64C 25/50 .. Steerable undercarriages; Shimmy damping ([steering devices applicable to land vehicles B62D](#))
- B64C 25/505 ... { [Shimmy damping](#) }
- B64C 25/52 .. Skis or runners
- B64C 25/54 .. Floats
- B64C 25/56 ... inflatable ([connection of valves to inflatable elastic bodies B60C 29/00](#))
- B64C 25/58 .. Arrangements or adaptations of shock-absorbers or springs ([shimmy dampers B64C 25/50](#); [vehicle suspension arrangements in general B60G](#); [shock absorber per se F16F](#))
- B64C 25/60 ... Oleo legs
- B64C 25/62 ... Spring shock-absorbers; Springs
- B64C 25/64 .... using rubber or like elements
- B64C 25/66 .. Convertible alighting gear; Combinations of different kinds of ground or like engaging elements
  
- B64C 25/68 . Arrester hooks ([arresting gear, e.g. on aircraft carriers B64F](#))

#### **Aircraft kinds and components not otherwise provided for**

- B64C 27/00** **Rotorcraft; Rotors peculiar thereto** ([alighting gear B64C 25/00](#))
- B64C 27/001 . {[Vibration damping devices](#)}
- B64C 27/006 . {[Safety devices](#)}
- B64C 27/007 .. { [adapted for detection of blade cracks](#) }

- B64C 27/008 . {Rotors tracking or balancing devices}
- B64C 27/02 . Gyroplanes
- B64C 27/021 .. {Rotor or rotor head construction (for helicopters [B64C 27/32](#))}
- B64C 27/022 ... {Devices for folding or adjusting the blades}
- B64C 27/023 ... {Construction of the blades; Coating of the blades}
- B64C 27/024 ... {Devices for shifting the rotor axis}
- B64C 27/025 ... {Rotor drives, in particular for taking off; Combination of autorotation rotors and driven rotors}
- B64C 27/026 ... {Devices for converting a fixed wing into an autorotation rotor and viceversa}
- B64C 27/027 .. {Control devices using other means than the rotor}
- B64C 27/028 .. {Other constructional elements; Rotor balancing}
- B64C 27/04 . Helicopters
- B64C 27/06 .. with single rotor
- B64C 27/08 .. with two or more rotors
- B64C 27/10 ... arranged coaxially
- B64C 27/12 .. Rotor drives
- B64C 27/14 ... Direct drive between power plant and rotor hub
- B64C 27/16 ... Drive of rotors by means, e.g. propellers, mounted on rotor blades
- B64C 27/18 .... the means being jet-reaction apparatus
- B64C 27/20 . Rotorcraft characterised by having shrouded rotors, e.g. flying platforms
- B64C 27/22 . Compound rotorcraft, i.e. aircraft using in flight the features of both aeroplane and rotorcraft
- B64C 27/24 .. with rotor blades fixed in flight to act as lifting surfaces
- B64C 27/26 .. characterised by provision of fixed wings
- B64C 27/28 .. with forward-propulsion propellers pivotable to act as lifting rotors
- B64C 27/30 .. with provision for reducing drag of inoperative rotor
- B64C 27/32 . Rotors (features common to rotors and propellers [B64C 11/00](#))
- B64C 27/322 .. {Blade travel limiting devices, e.g. droop stops}
- B64C 27/325 .. {Circulation-control rotors}
- B64C 27/327 .. {Retention means relieving the stress from the arm, e.g. tie-bars}
- B64C 27/33 .. having flexing arms
- B64C 27/35 .. having elastomeric joints
- B64C 27/37 .. having articulated joints ([B64C 27/33](#), [B64C 27/35](#) take precedence)
- B64C 27/39 ... with individually articulated blades, i.e. with flapping or drag hinges
- B64C 27/41 ... with flapping or universal joint, common to the blades
- B64C 27/43 .... see-saw type, i.e. two-bladed rotor
- B64C 27/45 ... with a feathering hinge only
- B64C 27/46 .. Blades
- B64C 27/463 ... {Blade tips}

- B64C 27/467 . . . Aerodynamic features {(B64C 27/463 takes precedence)}
- B64C 27/473 . . . Constructional features {(B64C 27/463 takes precedence)}
- B64C 27/48 . . . . Root attachment to rotor head
- B64C 27/50 . . . . Blades foldable to facilitate stowage of aircraft
  
- B64C 27/51 . {Damping of blade movements}
  
- B64C 27/52 . Tilting of rotor bodily relative to fuselage (of see-saw type construction B64C 27/43)
  
- B64C 27/54 . Mechanisms for controlling blade adjustment or movement relative to rotor head, e.g. lag-lead movement
  
- B64C 27/56 . . Initiating means, e.g. actuated personally
- B64C 27/57 . . . automatic or condition responsive, e.g. responsive to rotor speed, torque or thrust
  
- B64C 27/58 . . Transmitting means
- B64C 27/59 . . . mechanical
- B64C 27/605 . . . . including swash plate, spider or cam mechanisms
- B64C 27/615 . . . . including flaps mounted on blades
- B64C 27/625 . . . . including rotating masses or servo rotors
- B64C 27/635 . . . . specially for controlling lag-lead movements of blades
- B64C 27/64 . . . . using fluid pressure
- B64C 27/68 . . . . using electrical energy
  
- B64C 27/72 . . Means acting on blades
- B64C 27/78 . . in association with pitch adjustment of blades of anti-torque rotor
- B64C 27/80 . . for differential adjustment of blade pitch between two or more lifting rotors
  
- B64C 27/82 . characterised by the provision of an auxiliary rotor or fluid-jet device for counter-balancing lifting rotor torque or changing direction of rotorcraft
  
- B64C 29/00** **Aircraft capable of landing or taking-off vertically** (attitude, flight direction, or altitude control by jet reaction B64C 15/00; rotorcraft B64C 27/00; air-cushion vehicles B60V)
  
- B64C 29/0008 . {having its flight directional axis horizontal when grounded}
- B64C 29/0016 . . {the lift during taking-off being created by free or ducted propellers or by blowers}
- B64C 29/0025 . . . {the propellers being fixed relative to the fuselage}
- B64C 29/0033 . . . {the propellers being tiltable relative to the fuselage}
- B64C 29/0041 . . {the lift during taking-off being created by jet motors}
- B64C 29/005 . . . {the motors being fixed relative to the fuselage}
- B64C 29/0058 . . . {with vertical jet}
- B64C 29/0066 . . . {with horizontal jet and jet deflector}
- B64C 29/0075 . . . {the motors being tiltable relative to the fuselage}
- B64C 29/0083 . . {the lift during taking-off being created by several motors of different type}
  
- B64C 29/0091 . {Accessories not provided for elsewhere}

- B64C 29/02 . having its flight directional axis vertical when grounded
- B64C 29/04 .. characterised by jet-reaction propulsion
  
- B64C 30/00                   Supersonic-type aircraft**
  
- B64C 31/00                   Aircraft intended to be sustained without power plant; Powered hang-glider-type aircraft; Microlight-type aircraft**
  
- B64C 31/02 . Gliders, e.g. sailplanes ([hang-gliders B64C 31/028](#))
- B64C 31/024 .. with auxiliary power plant
  
- B64C 31/028 . Hang-glider-type aircraft; Microlight-type aircraft
- B64C 31/0285 .. {Safety devices}
- B64C 31/032 .. having delta shaped wing
- B64C 31/036 .. having parachute-type wing ([parachutes B64D 17/00](#))
  
- B64C 31/04 . Man-powered aircraft ([ornithopters B64C 33/00](#))
  
- B64C 31/06 . Kites ([hang-gliders B64C 31/028](#); toy aspects [A63H 27/08](#); towed targets [F41J](#){for propelling boats [B63H 9/0685](#); for propelling wind driven boards, control means and harnesses therefor [B63B 35/7976](#)})
  
- B64C 33/00                   Ornithopters**
  
- B64C 33/02 . Wings; Actuating mechanisms therefor
- B64C 33/025 .. {the entire wing moving either up or down}
  
- B64C 35/00                   Flying-boats; Seaplanes ([alighting gear B64C 25/00](#))**
  
- B64C 35/001 . {with means for increasing stability on the water}
- B64C 35/002 .. {using adjustable auxiliary floats}
- B64C 35/003 .. {using auxiliary floats at the wing tips}
  
- B64C 35/005 . {with propellers, rudders or brakes acting in the water}
  
- B64C 35/006 . {with lift generating devices}
  
- B64C 35/007 . {Specific control surfaces therefor}
  
- B64C 35/008 . {Amphibious sea planes}
  
- B64C 37/00                   Convertible aircraft ([vehicles capable of travelling in or on different media B60E](#))**
  
- B64C 37/02 . Flying units formed by separate aircraft ([towing, air-refuelling, or aircraft-carrying aircraft B64D](#))

**B64C 39/00 Aircraft not otherwise provided for**

- B64C 39/001 . {Flying saucers}
- B64C 39/003 . {with wings, paddle wheels, bladed wheels, moving or rotating in relation to the fuselage (rotorcraft [B64C 27/00](#), ornithopters [B64C 33/00](#))}
- B64C 39/005 .. {about a horizontal transversal axis}
- B64C 39/006 .. {about a vertical axis}
- B64C 39/008 .. {about a longitudinal axis}
- B64C 39/02 . characterised by special use
- B64C 39/022 .. {Tethered aircraft}
- B64C 39/024 .. {of the remote controlled vehicle type, i.e. RPV}
- B64C 39/026 .. {for use as personal propulsion unit}
- B64C 39/028 .. {Micro-sized aircraft}
- B64C 39/04 . having multiple fuselages or tail booms
- B64C 39/06 . having disc- or ring-shaped wings {([B64C 39/001](#) takes precedence)}
- B64C 39/062 .. {having annular wings}
- B64C 39/064 ... {with radial airflow}
- B64C 39/066 .. {having channel wings}
- B64C 39/068 .. {having multiple wings joined at the tips}
- B64C 39/08 . having multiple wings {([B64C 39/06](#) takes precedence)}
- B64C 39/10 . All-wing aircraft {([B64C 39/001](#) takes precedence)}
- B64C 39/12 . Canard-type aircraft

**B64C 2001/00 Fuselages; Constructional features common to fuselages, wings, stabilising surfaces and the like (aerodynamical features common to fuselages, wings, stabilising surfaces, and the like [B64C 23/00](#); flight-deck installations [B64D](#))**

- B64C 2001/0018 . comprising two decks adapted for carrying passengers only
- B64C 2001/0027 .. arranged one above the other
- B64C 2001/0036 .. arranged side by side at the same level
- B64C 2001/0045 . Fuselages characterised by special shapes
- B64C 2001/0054 . Fuselage structures substantially made from particular materials
- B64C 2001/0063 .. from wood
- B64C 2001/0072 .. from composite materials
- B64C 2001/0081 .. from metallic materials

[B64C 2001/009](#) . comprising decompression panels or valves for pressure equalisation in fuselages or floors

**B64C 2003/00** **Wings** (stabilising surfaces [B64C 5/00](#); ornithopter wings [B64C 33/02](#))

B64C 2003/10 . Shape of wings

B64C 2003/14 .. Aerofoil profile

[B64C 2003/142](#) ... with variable camber along the airfoil chord

[B64C 2003/143](#) ... comprising interior channels

[B64C 2003/144](#) ... including a flat surface on either the extrados or intrados

[B64C 2003/145](#) ... comprising 'Gurney' flaps

[B64C 2003/146](#) ... comprising leading edges of particular shape

[B64C 2003/147](#) ... comprising trailing edges of particular shape

[B64C 2003/148](#) ... comprising protuberances, e.g. for modifying boundary layer flow

[B64C 2003/149](#) ... for supercritical or transonic flow

B64C 2003/38 . Adjustment of complete wings or parts thereof

B64C 2003/44 .. Varying camber

[B64C 2003/445](#) ... by changing shape according to the speed, e.g. by morphing

B64C 2003/54 .. Varying in area (flaps extendable to increase camber [B64C 3/44](#))

[B64C 2003/543](#) ... by changing shape according to the speed, e.g. by morphing

**B64C 2009/00** **Adjustable control surfaces or members, e.g. rudders** (trimming stabilising surfaces [B64C 5/10](#))

[B64C 2009/005](#) . Ailerons

B64C 2009/14 . forming slots (boundary-layer control [B64C 21/00](#))

[B64C 2009/143](#) .. comprising independently adjustable elements for closing or opening the slot between the main wing and leading or trailing edge flaps

**B64C 2013/00** **Control systems or transmitting systems for actuating flying-control surfaces, lift-increasing flaps, air brakes, or spoilers**

B64C 2013/24 . Transmitting means

B64C 2013/38 .. with power amplification

B64C 2013/50 ... using electrical energy

B64C 2013/503 ..... {Fly-by-Wire}

[B64C 2013/506](#) ..... using electro-hydrostatic actuators (EHA's)

**B64C 2025/00** **Alighting gear** (air-cushion alighting gear [B60V 3/08](#))

B64C 2025/001 . {Devices not provided for in the groups [B64C 25/02](#) to [B64C 25/68](#)}

[B64C 2025/003](#) .. Means for reducing landing gear noise, or turbulent flow around it, e.g. landing

- gear doors used as deflectors
- B64C 2025/005 .. Tail skids for fuselage tail strike protection on tricycle landing gear aircraft
- B64C 2025/006 .. Landing gear legs comprising torque arms
- B64C 2025/008 .. Comprising means for modifying their length, e.g. for kneeling, for jumping, or for leveling the aircraft
  
- B64C 2025/02 . Undercarriages
- B64C 2025/08 .. non-fixed, e.g. jettisonable
- B64C 2025/10 ... retractable, foldable, or the like
- B64C 2025/12 .... sideways
- B64C 2025/125 ..... into the fuselage, e.g. main landing gear pivotally retracting into or extending out of the fuselage
  
- B64C 2025/32 . characterised by the ground or like engaging elements ([arrester hooks B64C 25/68](#))
- B64C 2025/325 .. specially adapted for helicopters
- B64C 2025/34 .. wheeled type, e.g. multi-wheeled bogies
- B64C 2025/345 ... Multi-wheel bogies having one or more steering axes
  
- B64C 2027/00 Rotorcraft; Rotors peculiar thereto ([alighting gear B64C 25/00](#))**
  
- B64C 2027/001 . {[Vibration damping devices](#)}
- B64C 2027/002 .. mounted between the rotor drive and the fuselage
- B64C 2027/003 .. mounted on rotor hub, e.g. a rotary force generator
- B64C 2027/004 .. using actuators, e.g. active systems
- B64C 2027/005 .. using suspended masses
  
- B64C 2027/04 . Helicopters
- B64C 2027/12 .. Rotor drives
- B64C 2027/125 ... including toroidal transmissions, e.g. of the CVT type
  
- B64C 2027/32 . Rotors ([features common to rotors and propellers B64C 11/00](#))
- B64C 2027/46 .. Blades
- B64C 2027/473 ... Constructional features {([B64C 27/463 takes precedence](#))}
- B64C 2027/4733 ..... Rotor blades substantially made from particular materials
- B64C 2027/4736 ..... from composite materials
  
- B64C 2027/54 . Mechanisms for controlling blade adjustment or movement relative to rotor head, e.g. lag-lead movement
- B64C 2027/72 .. Means acting on blades
- B64C 2027/7205 ... on each blade individually, e.g. individual blade control (IBC)
- B64C 2027/7211 .... without flaps
- B64C 2027/7216 ..... using one actuator per blade
- B64C 2027/7222 ..... using airfoil deformation
- B64C 2027/7227 ..... using blowing slots actuated by piezoelectric actuators
- B64C 2027/7233 ..... using higher-harmonic control (HHC)

- B64C 2027/7238 . . . . . by controlling existing swash plate actuators
- B64C 2027/7244 . . . . . by using dedicated actuators
- B64C 2027/725 . . . . . using jets controlled by piezoelectric actuators
- B64C 2027/7255 . . . . . using one or more swash plates
- B64C 2027/7261 . . . . . with flaps
- B64C 2027/7266 . . . . . actuated by actuators
- B64C 2027/7272 . . . . . of the electro-hydraulic type
- B64C 2027/7277 . . . . . of the magnetostrictive type
- B64C 2027/7283 . . . . . of the piezoelectric type
- B64C 2027/7288 . . . . . of the memory shape type
- B64C 2027/7294 . . . . . actuated mechanically, e.g. by means of linkages
  
- B64C 2027/82 . . . characterised by the provision of an auxiliary rotor or fluid-jet device for counter-balancing lifting rotor torque or changing direction of rotorcraft
- B64C 2027/8209 . . . Electrically driven tail rotors
- B64C 2027/8218 . . . wherein the rotor or the jet axis is inclined with respect to the longitudinal horizontal or vertical plane of the helicopter
- B64C 2027/8227 . . . comprising more than one rotor
- B64C 2027/8236 . . . including pusher propellers
- B64C 2027/8245 . . . using air jets
- B64C 2027/8254 . . . Shrouded tail rotors, e.g. "Fenestron" fans
- B64C 2027/8263 . . . comprising in addition rudders, tails, fins, or the like
- B64C 2027/8272 . . . comprising fins, or movable rudders
- B64C 2027/8281 . . . comprising horizontal tail planes
- B64C 2027/829 . . . comprising a V-tail units
  
- B64C 2031/00      Aircraft intended to be sustained without power plant; Powered hang-glider-type aircraft; Microlight-type aircraft**
  
- B64C 2031/06 . . . Kites ([hang-gliders B64C 31/028](#); [toy aspects A63H 27/08](#); [towed targets F41J](#){for [propelling boats B63H 9/0685](#); for [propelling wind driven boards, control means and harnesses therefor B63B 35/7976](#)})
- B64C 2031/065 . . . of inflatable wing type
  
- B64C 2039/00      Aircraft not otherwise provided for**
  
- B64C 2039/105 . . . of blended wing body type
  
- B64C 2201/00      Unmanned aerial vehicles; Equipment therefor**
  
- B64C 2201/02 . . . characterized by type of aircraft
- B64C 2201/021 . . . Airplanes, i.e. having wings and tail planes
- B64C 2201/022 . . . Balloons, blimps or airships

- B64C 2201/024 .. Helicopters, or autogiros
- B64C 2201/025 .. Ornithopters, i.e. generating lift and propulsion by flapping wings or insect like means
- B64C 2201/027 .. Flying platforms
- B64C 2201/028 .. of all-wing types
  
- B64C 2201/04 . characterised by type of power plant
- B64C 2201/042 .. by electric motors; Electric power sources therefor, e.g. fuel cells, solar panels or batteries
- B64C 2201/044 .. by internal combustion engines, e.g. oscillating piston or rotary piston engines
- B64C 2201/046 .. by rocket engines, ramjets, or pulse-reactors
- B64C 2201/048 .. by jet turbines, or turbofans
  
- B64C 2201/06 . characterised by in-flight supply of energy
- B64C 2201/063 .. by refueling
- B64C 2201/066 .. by recharging of batteries, e.g. by induction
  
- B64C 2201/08 . characterised by the launching method
- B64C 2201/082 .. Released from other aircraft
- B64C 2201/084 .. using catapults
- B64C 2201/086 .. by taking-off horizontally by own power, e.g. from a runway
- B64C 2201/088 .. Vertical take-off using special means ([for helicopters B64C 2201/024](#); [for balloons B64C 2201/022](#))
  
- B64C 2201/10 . characterised by the lift producing means
- B64C 2201/101 .. Lifting aerostatically, e.g. using lighter-than-air gases in chambers
- B64C 2201/102 .. Deployable wings, e.g. foldable or morphing wings
- B64C 2201/104 .. Fixed wings
- B64C 2201/105 .. Inflatable wings
- B64C 2201/107 .. Parachutes; Parasails; Kites; Membranes
- B64C 2201/108 .. using rotors, or propellers
  
- B64C 2201/12 . adapted for particular use
- B64C 2201/121 .. for dropping bombs; for electronic warfare; Flying bombs
- B64C 2201/122 .. as communication relays, e.g. high altitude platforms
- B64C 2201/123 .. for imaging, or topography
- B64C 2201/125 .. for meteorology
- B64C 2201/126 .. adapted for performing different kinds of missions, e.g. multipurpose use
- B64C 2201/127 .. for photography, or video recording, e.g. by using cameras
- B64C 2201/128 .. for transporting goods other than bombs
  
- B64C 2201/14 . characterised by flight control
- B64C 2201/141 .. autonomous, i.e. by navigating independently from ground or air stations, e.g. by using inertial navigation systems (INS)
- B64C 2201/143 ... adapted for flying in formations

- B64C 2201/145 . . . using satellite radio beacon positioning systems, e.g. GPS
- B64C 2201/146 . . Remote controls
- B64C 2201/148 . . . using tethers for connecting to ground station
  
- B64C 2201/16 . characterised by type of propulsion unit
- B64C 2201/162 . . using ducted fans or propellers
- B64C 2201/165 . . using unducted propellers
- B64C 2201/167 . . using rockets, ramjets, pulse jets, plasma, or the like
  
- B64C 2201/18 . characterised by landing method
- B64C 2201/182 . . by being caught in mid-air, or next to the ground, e.g. using a net
- B64C 2201/185 . . by deploying parachutes, or the like
- B64C 2201/187 . . by landing horizontally, e.g. on a runway
  
- B64C 2201/20 . Methods for transport, or storage of unmanned aerial vehicles
- B64C 2201/201 . . in containers
- B64C 2201/203 . . in rucksacks, or bags to be carried by persons
- B64C 2201/205 . . by waterborne vehicles, e.g. ships or submarines or by hovercraft
- B64C 2201/206 . . by airborne vehicles, e.g. airplanes or helicopters
- B64C 2201/208 . . by landborne vehicles, e.g. trucks, lorries, tanks or cars
  
- B64C 2201/22 . having stealth characteristics

**B64C 2203/00 Flying model aircraft, flying toy aircraft**

**B64C 2211/00 Modular constructions of airplanes or helicopters**

**B64C 2220/00 Active noise reduction systems**

**B64C 2230/00 Boundary layer controls**

- B64C 2230/02 . by using acoustic waves generated by transducers
- B64C 2230/04 . by actively generating fluid flow
- B64C 2230/06 . by explicitly adjusting fluid flow, e.g. by using valves, variable aperture or slot areas, variable pump action or variable fluid pressure

- B64C 2230/08 . by influencing fluid flow by means of surface cavities, i.e. net fluid flow is null
- B64C 2230/10 . by influencing fluid flow by heating using other means than combustion
- B64C 2230/12 . by using electromagnetic tiles, fluid ionizers, static charges or plasma
- B64C 2230/14 . achieving noise reductions
- B64C 2230/16 . by blowing other fluids over the surface than air, e.g. He, H, O<sub>2</sub> or exhaust gases
- B64C 2230/18 . by using small jets that make the fluid flow oscillate
- B64C 2230/20 . by passively inducing fluid flow, e.g. by means of a pressure difference between both ends of a slot or duct
- B64C 2230/22 . by using a surface having multiple apertures of relatively small openings other than slots
- B64C 2230/24 . by using passive resonance cavities, e.g. without transducers
- B64C 2230/26 . by using rib lets or hydrophobic surfaces
- B64C 2230/28 . at propeller or rotor blades

#### **B64C 2700/00 Codes corresponding to the former IdT classification**

- B64C 2700/62 . Codes corresponding to the former IdT classification of class 62
- B64C 2700/6201 .. Airplanes, helicopters, autogyros
- B64C 2700/6202 ... Characteristics not limited to an aircraft type
- B64C 2700/6204 .... Materials
- B64C 2700/6205 .... Protection means, e.g. against rust, water, fire
- B64C 2700/6207 .... Stabilisation
- B64C 2700/6208 ..... Longitudinal and transversal stability
- B64C 2700/6209 ..... automatically controlled
- B64C 2700/6211 ..... with movable weight not acting as pendulum
- B64C 2700/6212 ..... with weight acting as pendulum
- B64C 2700/6214 ..... with parts of the aircraft acting as pendulum
- B64C 2700/6215 ..... with fluid acting as pendulum
- B64C 2700/6216 ..... by gyroscopical effect ([also in combination with pendulum](#))
- B64C 2700/6218 ..... by other pulse power source, e.g. aerodynamical effect, propellers
- B64C 2700/6219 ..... by auxiliary fixed or movable surfaces or other special devices, or surfaces acting as parachutes
- B64C 2700/6221 ..... manually controlled
- B64C 2700/6222 ..... with movable weight not acting as pendulum

B64C 2700/6223	.....	with weight acting as pendulum
B64C 2700/6225	.....	by gyroscopical effect (also in combination with pendulum)
B64C 2700/6226	.....	by other pulse power source; e.g. aerodynamical effect, popeller
B64C 2700/6228	.....	by auxiliary planes or parachutes
B64C 2700/6229	.....	Special devices to stabilise or to compensate a helicopter rotor by other means than counter rotating rotor
B64C 2700/623	.....	Special devices to stabilise or to compensate a gyroplane pivoting torque
B64C 2700/6232	...	Airplanes with fixed or movable wings
B64C 2700/6233	....	Design, structure or mounting of wings
B64C 2700/6235	.....	Guy-wires assemblies; Connections between wings and fuselage
B64C 2700/6236	.....	Honeycomb stiffeners
B64C 2700/6238	.....	Pressure equalising devices between the inside of the wing and the atmosphere
B64C 2700/6239	.....	Full wing structures
B64C 2700/624	.....	Wings or parts thereof movable during flight
B64C 2700/6242	.....	adjustable about several axes
B64C 2700/6243	....	Control systems
B64C 2700/6245	.....	by warping of wings tips
B64C 2700/6246	.....	by auxiliary surfaces at the wings tips
B64C 2700/6247	.....	by auxiliary surfaces outside the wings tips
B64C 2700/6249	.....	by propellers
B64C 2700/625	.....	by jet flaps
B64C 2700/6252	.....	Control systems assemblies
B64C 2700/6253	.....	Feedback compensation devices
B64C 2700/6254	.....	Control systems or transmitting systems for actuating control surfaces
B64C 2700/6256	.....	Control devices for fins or rudders
B64C 2700/6257	.....	by hydraulical, pneumatical or electrical means
B64C 2700/6259	.....	Control devices for feed-back compensating and guiding surfaces
B64C 2700/626	.....	by hydraulical, pneumatical or electrical means
B64C 2700/6261	.....	Transmission systems
B64C 2700/6263	.....	Servo actuators; Auxiliary motors
B64C 2700/6264	.....	Vibrations suppressing devices
B64C 2700/6266	.....	Safety devices
B64C 2700/6267	.....	Control devices for a special position of the flying aircraft or a special position of the pilot
B64C 2700/6269	.....	Control from outside the aircraft
B64C 2700/627	....	Influencing airflow over aircraft surfaces
B64C 2700/6271	.....	by fluid flow around the aircraft
B64C 2700/6273	.....	lift being provided by static devices, e.g. balloons
B64C 2700/6274	.....	by other means, e.g. propellers, rotors, air jets
B64C 2700/6276	...	Rotorcraft
B64C 2700/6277	....	with driven or windmilling propellers

B64C 2700/6278	.....	Features common for any type of rotorcraft
B64C 2700/628	.....	Devices for the adjustment of the blades; Folding blades
B64C 2700/6281	.....	Helicopters
B64C 2700/6283	.....	Rotor construction
B64C 2700/6284	.....	Blades control devices
B64C 2700/6285	.....	Drag reducing devices for an inoperative rotor
B64C 2700/6287	.....	Rotor drives
B64C 2700/6288	.....	Hydraulic, electric or man powered rotorcrafts
B64C 2700/629	.....	Rotors which can be used as propulsion means
B64C 2700/6291	.....	Rotors stowable in the wings
B64C 2700/6292	.....	Control means using other devices than the rotor
B64C 2700/6294	.....	Construction parts, e.g. frames; Balancing; Flight control; Brakes
B64C 2700/6295	...	Aircraft specially adapted for special uses
B64C 2700/6297	....	for military uses
B64C 2700/6298	...	Gliders